UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,399	07/30/2003	C. Frank Bennett	ISPH-0752	5438

7590 04/18/2005

Licata & Tyrrell P.C.
66 E. Main Street
Marlton, NJ 08053

EXAMINER	
BOWMAN, AMY HUDSON	
ART UNIT	PAPER NUMBER
1635	

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/630,399	BENNETT ET AL.	
	Examiner	Art Unit	
	Amy H. Bowman	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-15* is/are pending in the application.

4a) Of the above claim(s) *15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/30/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of group I, claims 1, 2 and 4-14 in the reply filed on 3/10/2005 is acknowledged. Applicant has canceled claims 3 and 16-20. Applicant has withdrawn claim 15.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 2 and 4-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 broadly reads on any compound 8 to 50 nucleobases in length targeted to the 3' untranslated region of a nucleic acid molecule encoding any IL-1 receptor-associated kinase-4, wherein said compound specifically hybridizes with said nucleic acid molecule and inhibits the expression of IL-1 receptor-associated kinase-4. Claim 2 specifies the compound to be an antisense oligonucleotide. Claims 4-10 further specify internucleoside linkage, sugar moiety and nucleobase modifications to the oligonucleotide. Claims 12-14 specify the compound to be in a composition comprising

a pharmaceutically acceptable carrier or diluent, further comprising a colloidal dispersion system, wherein the compound is an antisense oligonucleotide. Claim 11 is drawn to any compound 8 to 50 nucleobases in length which specifically hybridizes with at least an 8-nucleobase portion of any active site on any nucleic acid molecule encoding any IL-1 receptor-associated kinase-4.

The claims encompass antisense directed to any homolog or allele from any species known or yet to be discovered of any IL-1 receptor-associated kinase-4, as well as any DNA genomic fragments or any transcript with IL-1 receptor-associated kinase-4 like activity. Although the specification discloses antisense oligonucleotide sequences to a single human IL-1 receptor-associated kinase-4 (table 1), the specification does not describe antisense oligonucleotides to any other IL-1 receptor-associated kinase-4 mRNA to describe the instantly claimed genus of all IL-1 receptor-associated kinase-4 genes. Each of the instantly disclosed antisense oligonucleotides are targeted to a single sequence, although the claims are drawn to any IL-1 receptor-associated kinase-4 sequence. One of ordinary skill in the art could not make such oligos to any IL-1 receptor-associated kinase-4 based on a single IL-1 receptor-associated kinase-4 sequence because each of the target sequences would be different.

The scope of the claimed invention is broad and the skilled artisan would not be able to envisage the entire genus claimed of antisense oligonucleotides to any IL-1 receptor-associated kinase-4 molecule such that the skilled artisan would recognize that the applicant was in possession of the claimed genus at the time of filing.

Thus, the instantly claimed invention cannot be said to have been adequately described in a way that would convey with reasonable clarity to those skilled in the art that, as of the filling date sought, applicant was in possession of the claimed invention because the specification does not provide a description of a sufficient number of antisense oligonucleotides to a sufficient number of IL-1 receptor-associated kinase-4 species that inhibit the expression of IL-1 receptor-associated kinase-4 to describe the full genus claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 11, 12 and 14 are rejected under 35 U.S.C. 102(a) or (e) as being anticipated by Wesche et al. (US 2003/0059916).

The invention is drawn to a compound, more specifically an antisense oligonucleotide, 8 to 50 nucleobases in length targeted to the 3' untranslated region of a nucleic acid molecule encoding encoding IL-1 receptor-associated kinase-4, wherein said compound specifically hybridizes with said nucleic acid molecule encoding encoding IL-1 receptor-associated kinase-4 and inhibits the expression of encoding IL-1

receptor-associated kinase-4. The invention is drawn to a composition comprising the compound, or more specifically the antisense oligonucleotide, and a pharmaceutically acceptable carrier or diluent. The invention is further drawn to compounds 8 to 50 nucleobases in length which specifically hybridize with at least an 8-nucleobase portion of an active site on a nucleic acid molecule encoding IL-1 receptor-associated kinase-4.

Wesche et al. teach an oligonucleotide fully complementary to residues 1408-1432 of IL-1 receptor-associated kinase-4, instant SEQ ID NO: 3 (see SEQ ID NO: 6 of Wesche et al.). The region of SEQ ID NO: 3 targeted not only spans the coding and stop codon region, but also extends into the 3' untranslated region and therefore meets the instant limitation of targeting at least an 8–nucleobase portion of an active site on a nucleic acid molecule encoding IL-1 receptor-associated kinase-4, as well as targeting the 3' untranslated region. Additionally, the primer oligonucleotide taught by Wesche et al. is used in pharmaceutically acceptable solutions. Although the sequence taught by Wesche et al. is disclosed as a primer, the sequence meets the structural limitations of the instant claim. As stated in the MPEP (see MPEP 2112), something that is old does not become patentable upon the discovery of a new property. Since the prior art oligonucleotide meets all of the structural limitations of the claim, the prior art oligonucleotide would then be considered to *prima facie* "inhibit expression" of the gene as claimed. Therefore, the instant invention is anticipated by Wesche et al.

Claims 1, 2, 4, 5, 11, 12 and 14 rejected under 35 U.S.C. 102(b) as being anticipated by Schlingensiepen et al. (WO 94/25588).

The invention is drawn to a compound, more specifically an antisense oligonucleotide, 8 to 50 nucleobases in length targeted to the 3' untranslated region of a nucleic acid molecule encoding encoding IL-1 receptor-associated kinase-4, wherein said compound specifically hybridizes with said nucleic acid molecule encoding encoding IL-1 receptor-associated kinase-4 and inhibits the expression of encoding IL-1 receptor-associated kinase-4, wherein the compound comprises a phosphorothioate linkage. The invention is drawn to a composition comprising the compound, or more specifically the antisense oligonucleotide, and a pharmaceutically acceptable carrier or diluent. The invention is further drawn to compounds 8 to 50 nucleobases in length which specifically hybridize with at least an 8-nucleobase portion of an active site on a nucleic acid molecule encoding IL-1 receptor-associated kinase-4.

Schlingensiepen et al. teach a 14 nucleotide antisense oligonucleotide fully complementary to residues 2443-2454 of IL-1 receptor-associated kinase-4, instant SEQ ID NO: 3 (see SEQ ID NO: 120 of Schlingensiepen et al.). Schlingensiepen et al. teach phosphorothioate linkages and pharmaceutical compositions. Although the antisense oligonucleotide taught by Schlingensiepen et al. is disclosed as being targeted to a nucleic acid encoding for transforming growth factor-β, the sequence meets the structural limitations of the instant claim. As stated in the MPEP (see MPEP 2112), something that is old does not become patentable upon the discovery of a new property. Since the prior art antisense oligonucleotide meets all of the structural limitations of the claim, the prior art oligonucleotide would then be considered to *prima*

facie "inhibit expression" of the gene as claimed. Therefore, the instant invention is anticipated by Schlingensiepen et al.

Claims 1, 2, 4, 5, 6, 8, 9, 11, 12 and 14 rejected under 35 U.S.C. 102(b) as being anticipated by Cook et al. (U.S. 5,614,617).

The invention is drawn to a compound, more specifically an antisense oligonucleotide, 8 to 50 nucleobases in length targeted to the 3' untranslated region of a nucleic acid molecule encoding encoding IL-1 receptor-associated kinase-4, wherein said compound specifically hybridizes with said nucleic acid molecule encoding encoding IL-1 receptor-associated kinase-4 and inhibits the expression of encoding IL-1 receptor-associated kinase-4, wherein the compound comprises a phosphorothioate linkage, sugar modification, or a 5-methylcytosine modification. The invention is drawn to a composition comprising the compound, or more specifically the antisense oligonucleotide, and a pharmaceutically acceptable carrier or diluent. The invention is further drawn to compounds 8 to 50 nucleobases in length which specifically hybridize with at least an 8-nucleobase portion of an active site on a nucleic acid molecule encoding IL-1 receptor-associated kinase-4.

Cook et al. teach a 16 nucleotide antisense oligonucleotide with 93.3% complementarity to residues 2389-2403 of IL-1 receptor-associated kinase-4, instant SEQ ID NO: 3 (see SEQ ID NO: 22 of Cook et al.). Cook et al. teach phosphorothioate linkages, sugar modifications, 5-methylcytosine modification and pharmaceutical acceptable carriers or diluents. As defined in the specification, page 10, it is understood

in the art that the sequence of an antisense compound need not be 100% complementary to that of its target nucleic acid to be specifically hybridizable. Although the antisense oligonucleotide taught by Cook et al. is not disclosed as specifically targeted to IL-1 receptor-associated kinase-4, the sequence meets the structural limitations of the instant claim. As stated in the MPEP (see MPEP 2112), something that is old does not become patentable upon the discovery of a new property. Since the prior art antisense oligonucleotide meets all of the structural limitations of the claim, the prior art oligonucleotide would then be considered to *prima facie* "inhibit expression" of the gene as claimed. Therefore, the instant invention is anticipated by Cook et al.

Claims 1, 2, 4, 5, 6, 7, 8, 10, 11, 12 and 14 rejected under 35 U.S.C. 102(b) as being anticipated by Schlingensiepen et al. (WO 98/33904).

The invention is drawn to a compound, more specifically an antisense oligonucleotide, 8 to 50 nucleobases in length targeted to the 3' untranslated region of a nucleic acid molecule encoding encoding IL-1 receptor-associated kinase-4, wherein said compound specifically hybridizes with said nucleic acid molecule encoding encoding IL-1 receptor-associated kinase-4 and inhibits the expression of encoding IL-1 receptor-associated kinase-4, wherein the compound comprises a phosphorothioate linkage, 2'-O-methoxyethyl sugar moiety, or a modified nucleobase. The invention is further drawn to chimeric oligonucleotides. The invention is drawn to a composition comprising the compound, or more specifically the antisense oligonucleotide, and a pharmaceutically acceptable carrier or diluent. The invention is further drawn to

compounds 8 to 50 nucleobases in length which specifically hybridize with at least an 8-nucleobase portion of an active site on a nucleic acid molecule encoding IL-1 receptor-associated kinase-4.

Schlingensiepen et al. teach a 17 nucleotide antisense oligonucleotide with 88.2% complementarity to residues 1918-1934 of IL-1 receptor-associated kinase-4, instant SEQ ID NO: 3 (see SEQ ID NO: 748 of Schlingensiepen et al.). Additionally, Schlingensiepen et al. teach a 14 nucleotide antisense oligonucleotide with 100% complementarity to residues 2443-2454 of IL-1 receptor-associated kinase-4, instant SEQ ID NO: 3 (see SEQ ID NO: 1255 of Schlingensiepen et al.). Schlingensiepen et al. teach phosphorothioate linkages, 2'-O-methoxyethyl sugar modifications, modified nucleobases, chimeric oligonucleotides and pharmaceutical acceptable carriers or diluents. As defined in the specification, page 10, it is understood in the art that the sequence of an antisense compound need not be 100% complementary to that of its target nucleic acid to be specifically hybridizable. Although the antisense oligonucleotide taught by Schlingensiepen et al. is not disclosed as specifically targeted to IL-1 receptor-associated kinase-4, the sequence meets the structural limitations of the instant claim. As stated in the MPEP (see MPEP 2112), something that is old does not become patentable upon the discovery of a new property. Since the prior art antisense oligonucleotide meets all of the structural limitations of the claim, the prior art oligonucleotide would then be considered to *prima facie* "inhibit expression" of the gene as claimed. Therefore, the instant invention is anticipated by Schlingensiepen et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2 and 4-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wesche et al. (U.S. 2003/0059916), in view of Scanlan et al., Taylor et al., Baracchini et al. (U.S. patent 5,801,154) and Bennett et al. (U.S. patent 5,998,148).

The invention of the above claims is drawn to antisense compounds that target IL-1 receptor-associated kinase-4 (disclosed as SEQ ID NO: 3 in the specification), or said compounds comprising internucleoside (i.e. phosphorothioate), sugar (i.e. 2'-O-methoxyethyl), nucleobase (i.e. 5-methylcytosine) or chimeras, or compositions comprising said compounds and pharmaceutically acceptable diluents or colloidal dispersion systems thereof.

Wesche et al. teach that antisense oligonucleotides can be introduced into a population of cells, thereby inhibiting IRAK-4 (IL-1 receptor-associated kinase-4) and associated transduction of inflammatory signals in the cells (see for example, page 3, last paragraph).

Wesche et al. do not teach internucleoside linkage, sugar moiety and nucleobase modifications to an oligonucleotide, chimeric oligonucleotides, or a colloidal dispersion system.

Scanlan et al. teach SEQ ID NO: 3 encodes an antigen that is associated with renal cancer (see page 460, NY-REN 64, listed as Genbank Accession Number AF155118, which is identical to IRAK-4 (SEQ ID NO: 3) of the instant application) and teach the sequence of instant SEQ ID NO: 3, including the sequence of the 3'-untranslated region.

Taylor et al. teach that antisense oligonucleotides 7-30 nucleotides long can be synthesized to inhibit the expression of any protein provided the cDNA sequence is known. Taylor et al. also indicate that the techniques of making and using such oligos are available to those of ordinary skill in the art, that it is common practice to chemically modify the such oligonucleotides to prolong their bioactivity, and also teach that with software analysis and high affinity oligos, one needs to screen only 3-6 oligos to find one that inhibits its target 66-95% (p. 565).

Baracchini et al. teach that antisense oligonucleotides can be used for research purposes, and also teach that preferred antisense oligonucleotides are modified in their sugar, backbone linkage and nucleobase composition (col. 6). Baracchini teaches that such modifications are desirable in antisense oligos because these modifications have desirable properties such as enhanced cellular uptake, enhanced affinity for nucleic acid targets and increased stability in the presence of nucleases. Baracchini et al provide specific embodiments of such modifications at columns 6-8 and in Example 1. These specific examples taught by Baracchini et al include the presently claimed phosphorothioate linkages, 2'-O-methoxyethyl sugars, 5-methylcytosine and chimeric oligonucleotides. Tables 1-4 show the successful design and use of modified

oligonucleotides in cells in culture. Table 1 exemplifies the successful practice of general antisense design taught at columns 8-10. Column 4 teaches various carriers for antisense delivery. Baracchini et al. also teaches at column 8 that antisense oligonucleotides are preferably 8 to 30 nucleotides and that it is more preferable to make antisense oligonucleotides that are 12 to 25 nucleotides in length. Baracchini et al. teach pharmaceutically acceptable carriers and colloidal dispersion systems (for example liposomes) for use in delivery of these compounds. Additionally, Baracchini et al. teach targeting such antisense oligonucleotides to the coding region, start codon, stop codon, and 3'-untranslated region of a target nucleic acid. Baracchini is considered to comprise a detailed blueprint for how to make and use inhibitory antisense oligos to target any known gene.

The teachings of Bennett et al. are considered to parallel those of Baracchini et al. Bennett et al. teaches general antisense targeting guidelines at columns 3-4. Bennett et al. also teaches targeting 5'-untranslated regions, start codons, coding regions, and 3'-untranslated regions of a desired target. Bennett teaches, in column 5, for example, that antisense compounds are commonly used as research reagents and diagnostics. Column 5 indicates that antisense oligonucleotides 8-30 nucleotides in length are particularly preferred. Columns 6-7 teach that preferred antisense oligonucleotides contain modified internucleoside linkages including phosphorothioate linkages, among others. Columns 7-8 teach that preferred antisense oligonucleotides comprise modified sugar moieties including 2'-O-methoxyethyl. Bennett et al. also teach one of ordinary skill to modify nucleobases in antisense oligonucleotides, including the teaching of 5-

methylcytosine (col. 8-9), and also to use chimeric antisense oligonucleotides (col. 9-10). Bennett et al. teach that the above modifications are known in the art to provide beneficial attributes to antisense oligonucleotides such as increased hybridization and nuclease protection, for example. Columns 10-24 teach numerous "carriers" for antisense oligonucleotides. Table 1 teaches the successful targeting of those regions taught in columns 3-4 with chimeric phosphorothioate oligonucleotides having 2'-MOE (a 2'-O-methoxyethyl modification). Thus, Bennett et al. is also considered to comprise a detailed blueprint for how to make and use inhibitory antisense oligos to target any known gene.

It would have been obvious to one of ordinary skill in the art to use the cDNA sequence of Scanlan et al. to generate antisense sequences as taught by Wesche et al. for inhibition of IL-1 receptor-associated kinase-4 expression, and further, it would have been obvious to one of ordinary skill in the art to incorporate modifications as taught by Baracchini et al. and Bennett et al. into said antisense compounds.

One would have been motivated to create such compounds because Wesche et al. explicitly teach that antisense oligonucleotides can be used to target IL-1 receptor-associated kinase-4. Additionally, Baracchini et al. and Bennett et al. each teach the 3' untranslated region to be a favorable target site. Scanlan et al. teach the instantly claimed target gene sequence, as well as the role of IL-1 receptor-associated kinase-4 in renal cancer. Since IL-1 receptor-associated kinase-4 had been taught to encode a cancer-associated antigen, one would have been motivated to inhibit the expression of this gene. Antisense oligonucleotides were known tools to accomplish such gene

inhibition, as explicitly taught by Wesche et al. and further supported by Taylor et al., Baracchini et al, and Bennett et al. One would have been motivated to modify said antisense compounds as taught by Baracchini et al. and Bennett et al., because both teach that such modifications increase an antisense compound's cellular uptake, target affinity and resistance to degradation.

Finally, one would have a reasonable expectation of success given that Taylor teaches that with software analysis and high affinity oligos, one needs to screen only 3-6 oligos to find one that inhibits its target 66-95%, and since Baracchini et al. and Bennett et al. both teach making modified antisense compounds targeted to distinct regions of a target gene, the steps of which are routine to one of ordinary skill in the art.

Thus in the absence of evidence to the contrary, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

Double Patenting Rejection

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2 and 4-14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,692,959. Although the conflicting claims are not identical, they are not patentably distinct from each other because they have overlapping scope.

Claim 1 is drawn to a compound 8 to 50 nucleobases in length targeted to the 3' untranslated region of a nucleic acid molecule encoding IL-1 receptor-associated kinase-4, wherein said compound specifically hybridizes with said nucleic acid molecule and inhibits the expression of IL-1 receptor-associated kinase-4. Claim 2 specifies the compound to be an antisense oligonucleotide. Claims 4-10 further specify modifications to the oligonucleotide. Claims 12-14 specify the compound to be in a composition comprising a pharmaceutically acceptable carrier or diluent, further comprising a colloidal dispersion system, wherein the compound is an antisense oligonucleotide. Claim 11 is drawn to a compound 8 to 50 nucleobases in length which specifically hybridizes with at least an 8-nucleobase portion of an active site on a nucleic acid molecule encoding any IL-1 receptor-associated kinase-4.

Patent '959 teaches antisense oligonucleotides 8 to 50 nucleobases in length targeted to the 3' untranslated region of a nucleic acid molecule encoding IL-1 receptor-associated kinase-4 (SEQ ID NO: 3) wherein said antisense oligonucleotide specifically hybridizes with and inhibits the expression of IL-1 receptor-associated kinase-4 (see claims 1 and 2). Claims 2-12 teach the same modifications as instantly claimed, as well

as the antisense oligonucleotide in a composition comprising a pharmaceutically acceptable carrier or diluent, further comprising a colloidal dispersion system. Therefore, the instant invention is anticipated by patent '959.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy H. Bowman whose telephone number is 571-272-0755. The examiner can normally be reached on Mon-Fri 7:30 am – 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It

also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. For more information about the PAIR system, see http://pair-direct.uspto.gov.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Amy H. Bowman
Examiner
Art Unit 1635

JAMES SCHULTZ
PATENT EXAMINER